

Comments by the American Petroleum Institute
To
The US Department of Energy
General Guidelines for Voluntary Greenhouse Gas Reporting
Proposed “Rulemaking” - 5 December 2003

Industry Context

The American Petroleum Institute (API) appreciates the opportunity to offer input to the US Department of Energy (US DOE) on the proposed changes to the General Guidelines for Voluntary Greenhouse Gas Reporting.

API represents more than 400 companies involved in all aspects of the oil and natural gas industry that are keenly interested in the successful implementation of this voluntary program. API, which has previously provided feedback to the US DOE, during the initial consultations and workshops that led to the development of the proposed Guidelines, will continue to be an active participant throughout the process.

API is relying on its extensive experience in the preparation of these comments. This experience includes:

- **Production of the *Petroleum Industry Guidelines for Reporting Greenhouse Gas (GHG) Emissions (December 2003)*.**

A Joint Industry Task Force that included API, IPIECA (International Petroleum Industry Environmental Conservation Association) and OGP (International Forum of Oil & Gas Producers) developed these industry guidelines. The guidelines were subject to extensive internal review by the industry and broad consultations with external reviewers and were formally launched at the 9th Conference of the Parties (COP9) to the UN Framework Convention on Climate Change (UNFCCC) in December 2003. A copy of the *Guidelines* is posted on: <http://www.ipieca.org/reporting/ghg.html>.

These *Guidelines* are responsive to the needs of the industry for GHG accounting and reporting guidance that specifically focuses on petroleum industry operations, while being cognizant of existing and evolving national and global GHG accounting and reporting guidance. The main purpose of the guidelines is to promote consistency in the accounting and reporting of petroleum industry GHG emissions. It sets principles for developing a GHG emissions inventory report and provides guidance for setting boundaries; designing an inventory; identifying and evaluating emission sources; reporting of emissions; and assuring the inventory process.

- **Development of the *API Compendium of Greenhouse Gas Emissions Estimation Methodologies for the Oil & Gas Industry* (‘Road-Test’ version: April 2001; Revised: February 2004).**

A team of industry experts developed the *API Compendium*. It provides a compilation of reliable, efficient, cost effective, and comparable, industry endorsed methods for estimating GHG emissions that can be used by oil and gas companies worldwide.



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The *API Compendium* provides a description of industry operations in its various segments and associated sources, which should be considered in the development of an inventory. It also contains exhaustive tabulations of emission factors and other engineering estimation techniques that are applicable to the myriad of industry operations, while outlining detailed procedures for conversions between different measurement unit systems.

API issued a Pilot Test Draft of the *API Compendium* in April 2001, followed by a wide range of consultations with US stakeholders and with “peer” industry associations worldwide. During 2003 API completed the ‘road-testing’ phase. The revised and updated version of the *API Compendium* is posted on the API website: <http://www.api.org>.

- **Participation in the Expert ‘Cadre’ of the US Technical Advisory Group (TAG) to the International Standards Organization (ISO).**

API experts are part of an expert ‘cadre’ involved in the editing and commenting on behalf of the US TAG on ISO 14064 Parts 1,2, 3. This ISO standard is an emerging international standard on GHG emissions estimation, reporting, validation and verification for entities and projects. The standard is a voluntary standard, part of the ISO 14000 family of standards and guidance documents aiming at improving Environmental Management Systems (EMS). When finalized, the intent is for the standard to be ‘regime neutral’ thus allowing for its use within the context of a variety of GHG accounting and reporting initiatives.

General Comments

The comments below pertain to the proposed General Guidelines published by the US DOE in the Federal Register on December 5, 2003. The Guidelines are authorized by section 1605(b) of the 1992 Energy Policy Act (42 U.S.C. sec. 13385(b)). DOE also proposes to publish the revised Guidelines as a new Part 300 in Title 10 of the Code of Federal Regulations. These General Guidelines are designed to enhance the measurement accuracy, reliability and verifiability of information reported under the 1605(b) program and to contribute to the President’s climate change goals.

API is supportive of the overall objectives and approach of the General Guidelines for Voluntary GHG Reporting, though it questions the designation of the development process as “rulemaking” and DOE’s proposal to include these General Guidelines as a new part of the Code of Federal Regulations.

As far as the proposed General Guidelines, API recognizes the need for a balanced approach that retains the flexibility of the current program while enhancing the rigor of scope and boundary definition to attain a robust and credible registry. API’s specific comments are organized around the main sections of the proposed “rulemaking”. Within each of the topics API is providing both its comments as well as addressing the issues raised by the US DOE in the preamble to the proposed “rulemaking”.

In addition, API recognizes that some of the details of the General Guidelines will be clarified later in the context of the forthcoming Technical Guidelines. Therefore, API retains the option to comment further on these issues once the revised General Guidelines are issued in conjunction with the Technical Guidelines.

Prior to delving into the detailed comments, API would like to highlight several issue areas that are of great importance to the oil & natural gas industry and which may affect the benefits to the industry from participating in this voluntary program:

1. **The determination of entity boundaries should maintain flexibility and consistency with other guidance** – Companies operating in the general industry sector known as the petroleum (or oil & natural gas) industry come in a wide-variety of sizes, complexity and organizational structures and are commonly conducted by two or more parties working together in joint ventures, instead of by individual firms. These ventures take a variety of legal forms, and may or may not be established as separate legal entities.

In view of these complicating factors, the industry has developed guidance for its members on how to set up their entity boundaries (Section 3.0 of the *Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions*, December 2003). This guidance provides specific details on accounting for GHG emissions from joint ventures and is based on two approaches: Operational Control or Equity Share. Further details of API's recommendations are provided below as part of the comments on Section 300.4, and by the example presented in *Annex A*.

API is recommending that the US DOE specifically recognize and cite these sectoral industry guidelines in its final guidance and thus help retain a consistent approach between US and worldwide industry operations.

2. **The definition of Significance Threshold should be amended** – The US DOE currently maintains that significant emissions might be defined as either 3% of overall emissions or 10,000 metric tons of carbon dioxide (CO₂) equivalent, *whichever is smaller*. Based on API's experience, there is an array of small sources at, or near, the 10,000 metric tons threshold that would require many different calculations to address as currently proposed. These sources are not significant relative to emissions associated with large, but rather steady, fuel consumption. To include the smaller sources would be cost-prohibitive and would discourage participation in the DOE program. It should be noted that other guideline documents have selected 5% as the significance threshold (California Climate Action Registry), while others have elected not to specify a numeric threshold (WRI/WBCSD GHG Protocol, and IPIECA/OGP/API Petroleum Industry Guidelines) but invoke the principle of relevancy and materiality. If DOE intends to use one of the numerical threshold levels contained in the draft "Guidelines," then API recommends that DOE select the option of defining that, as a minimum, up to *3% of total emissions or 10,000 metric tons of CO₂- equivalent whichever is larger*, could be excluded from reporting.

API would like to emphasize that the definition of this threshold level might play a major role in an organization's decision on whether to participate in this voluntary reporting initiative, due to the increased reporting burden associated with the need to quantify a multitude of small, and insignificant, emission sources. A large oil company may encompass tens of thousands of oil and gas wells, many processing facilities, miles of pipeline, numerous ships and barges, multiple refineries, and thousands of marketing and retail outlets. The reporting burden of tracking all these individual sources is significant. Supposing, hypothetically, that a company's total emissions were in excess of 10 million metric tons of CO₂ equivalent, the "10,000 metric tons or less" requirement would effectively be a de minimis threshold of less than 0.1% which is beyond the ability of current methodology to quantify with accuracy and consistency.

Therefore, API contends that the threshold of 3% or 10,000 metric tons of CO₂ equivalent is arbitrary and it is not clear what it will mean in practice for member facilities and entities. Furthermore, no numerical value should be proposed unless the US DOE has precise data to support the selected threshold. It will be important to analyze this point carefully as the Technical Guidelines are developed in order to be able to evaluate how these thresholds might be operationalized, particularly for large complex entities.

3. **The inclusion of terrestrial sinks for carbon stock should not be required for non-agricultural or non-forestry operations** - The US DOE proposal requires entities to keep track of changes in terrestrial carbon stock. This requirement could be resource intensive for reporting entities, such as oil & gas producers, or pipeline operators, that either own or lease large amounts of land but are not engaged in agriculture or forestry.

The *API Compendium* does not address the changes in carbon stock for managed lands, since this is not usually an industry practice related to the estimation of greenhouse gas emissions. Notwithstanding the industry's participation in various wetland protection and mitigation activities, as well as in conservation projects, the methodologies for keeping track of terrestrial carbon stock changes in land holdings are rarely implemented. Therefore, imposing such a requirement would negate DOE's stated intent to encourage participation by small and mid-size organizations that might elect not to participate due to lack of topical knowledge or access to applicable guidance.

API recommends that for non-agricultural or non-forestry operations, the reporting of sinks should not be a requirement for reporting of GHG emissions, or the registration of emission reductions. Since it is expected that under normal industry operations, these changes in carbon stock might translate to emission increments that are within the insignificance threshold, discussed above, accounting for terrestrial sinks for carbon stock would be unnecessarily burdensome for the petroleum industry.

4. **The proposed guidelines should contain specific provisions for recognizing emission reductions associated with anticipated industry actions** – The petroleum industry is undertaking a variety of measures to improve their energy efficiency (reduce GHG intensity). The measures typically include both internal actions to capture wasted heat, lower internal energy demand and develop large combined heat and power (CHP) projects that improve efficiency of operations and lead to exporting the excess power generated to the grid.

API contends that DOE needs to expand its definition of *Avoided Emissions* and explicitly recognize that by exporting power to the grid, CHP projects contribute to such avoided emissions, by minimizing or eliminating the need for more base load power generation.

To further clarify this point API is providing in *Annex B* an excerpt from an on-going API study that demonstrates how the *API Compendium* should be used in quantification of a variety of greenhouse gas emission reduction examples.

5. **The proposal should explicitly address emission reductions associated with carbon capture and geologic storage (or sequestration)** - The proposed Guidelines do not adequately address geologic carbon sequestration. The current definition of sequestration is not suited for describing geologic sequestration since it seems to limit sequestration to those activities that remove carbon dioxide that is already part of the atmosphere. API recommends that the definition of sequestration be expanded to encompass geologic sequestration (or storage) where the carbon dioxide was obtained from (1) stripping carbon dioxide from natural gas at a processing plant; (2) coal gasification; or (3) capturing carbon dioxide from a flue gas stream.

API continues to recommend, as it did in its 27 January 2003 comments on the Voluntary Greenhouse Gases Reporting Workshops, that the guidelines *explicitly* address methodologies for estimating emission reductions for various types of carbon capture and geologic sequestration.

6. **The proposal should allow a variety of physical measures for GHG Intensity Definition** – The proposed Guideline envisions a single physical output parameter that would be used entity-wide to

report GHG emissions intensity and track reductions. Such an approach might not be feasible for large and complex organizations that comprise various types of operations.

A case in point would be the various sectors in the oil & gas industry where each individual sector would probably need to define its own output measure for meaningful normalization and tracking of GHG intensity. One approach that would help simplify the establishment of intensity measures is to link intensity to throughput rather than output only. Therefore, API recommends that industry sectors be consulted on the development of appropriate intensity measures and that the DOE recognize the need for flexibility to address specific characteristics of the various industry sectors.

7. **The proposal unnecessarily complicates entity reporting and registration by attempting to exclude output related or product change related reductions** – Entities in the oil and gas industry are complicated entities with large numbers of unique facilities producing many different products. For example, output in mature natural gas fields declines naturally. Section 300.8 of the proposed Guidelines appears to exclude emission reductions associated with Natural Gas Star investments that occur in gas fields where output is naturally declining, but would not exclude emission reductions from identical investments that occurred in a field where output is not yet declining.

As mentioned in item 6 above, another problematic issue would be determining a meaningful output metric. Refineries are very complex, interrelated processes that produce a wide variety of products. The GHG intensity associated with the manufacture of these products can vary widely and production volumes do not correlate well with either GHG emissions or revenue. The complexity of the processing and variety of products makes it impossible to derive a single output metric that could be used to definitively determine if “output” increase or decreased. Other examples abound in the real world of business operations.

Parts of Section 300.8 that restrict the reporting and registration of emissions reductions associated “in whole or in part” with reductions in output, plant closings or “changes in product” unnecessarily complicate participation in the 1605(b) program. Additionally, these restrictions lead to a biased representation of emission reductions in the U.S. economy by allowing reporting and registration of only certain categories of reductions, while not allowing reporting and registration of other categories of reductions. The Guidelines should allow complete reporting and registering of emissions and emission reductions, regardless of cause, and not create an unrealistically complicated and costly reporting system that reduce participation of entities reducing their emissions. This is clearly a complicated issue that relates also to baseline adjustment and it would need to be more fully discussed in the context of the Technical Guidelines.

8. **The certification and verification requirements should be simplified and allow more flexibility** – The current proposal that the chief executive officer (CEO) of a company, organization or institution, be required to certify the greenhouse gas emission reports is not feasible. It would be more practical and more reliable to have a responsible official, who is knowledgeable and fully cognizant of the organization’s greenhouse gas mitigation program, certify the submitted reports.

The guidelines also strongly encourage participants to have their reports verified by an external third-party. Such a requirement would be resource intensive, without necessarily providing the necessary assurance of proper inventory verification. API recommends that the US DOE emphasize more the process that could be undertaken and the qualifications of the personnel undertaking the task, while recognizing that such a verification might be conducted either internally or externally, as is commonly practiced in other areas of management systems auditing.

9. **The proposal should clarify DOE's intent on guidance vs. "rulemaking"** – Section 1605(b) has for the past decade encouraged voluntary greenhouse gas reporting and provided the needed guidance for doing so. In an apparent effort to enhance the reporting framework and ensure more consistency among reporters, however, DOE has elected to propose the new "guidelines" in the Federal Register – referring in several places in that notice to this project as a "rulemaking" - with the goal of publishing them as a new Part (Part 300) in Title 10 of the Code of Federal Regulations (CFR).

API has no concern about publication of the proposed or final guidelines as Federal Register notices; indeed, that is one way to ensure widespread dissemination and access to the guidelines. However, even assuming that incorporation of the "guidelines" in the CFR is legally permissible, and even though DOE maintains that the new "guidelines" are in fact merely guidance, and that 1605(b) will remain a "voluntary" program, publication in the CFR likely will cause future concern and confusion among potential participants. Guidelines, by definition, are not regulations and thus are not binding or enforceable. Even if DOE intends the new "guidelines" to be non-binding, and the 1605(b) program to be voluntary, inclusion in the CFR might cause some facilities and companies to refrain from participating in the program due to uncertainty as to whether the program is, in fact, a regulation. Specifically, although initial entry into the program might be voluntary, potential participants may feel that – once in the program - the specific reporting criteria will impose mandatory, inflexible, and enforceable regulatory requirements.

In addition, one of the inherent advantages of true guidelines is that they are more flexible, and can be more easily revised, than regulations as the need arises. However, if these 1605(b) "guidelines" are published in the CFR, DOE likely will find it more difficult and time-consuming to revise them in the future (i.e., any changes might be challenged unless made through notice-and-comment "rulemaking" procedures).

Moreover, section 1605(b) explicitly authorizes DOE to issue "guidelines," but says nothing whatever about adopting regulations. Thus, publication of these "guidelines" in the CFR, with all the trappings of a regulation, might lead some stakeholders to claim that the final "guidelines" are an unauthorized – and thus unlawful - "rulemaking". *(API is aware that the Office of Federal Register, in a letter dated Jan. 23, 2004, has opined that publication of guidelines in the CFR is legally authorized. However, that letter does not resolve the concern that some potential participants in the program may perceive that the revised "guidelines" are, in fact, "regulations.")*

Specific Comments on Proposed General Guidelines

The specific comments pertaining to the proposed General Guidelines are organized below around the sections of the US DOE proposed "rulemaking" as published on December 5, 2003, in the Federal Register. The comments within each of the sections provide responses to specific issues raised by the US DOE. API is using this approach in order to facilitate the review of its comments by the US DOE though it does not believe that the General Guidelines should be published as a new part (Part 300) to Title 10 of the Code of Federal Regulations.

Definitions {300.2}

Clear definitions are essential to removing ambiguity from the inventory and reporting process. Therefore, API suggests that some of the proposed definitions be amended to ensure consistency among various guidelines and protocols and enable a robust interpretation of their intent throughout the process.

API would like to put forward some recommendations for revised definition text, as follows:

Proposed revisions to definitions	
<u>Avoided emissions</u>	- GHG emission reductions calculated relative to what the emissions would have been in the absence of the specific activity of the entity
<u>de Minimis Emissions</u>	- { This definition would have to be amended in line with the final determination about a significance threshold. Please note our extended discussion of the topic regarding the arbitrary nature of the threshold under item # 2 of our general comments. }
<u>Emissions Intensity</u>	- Emissions per unit of entity activity, such as the quantity of physical output, or other physical, or non-physical indicator.
<u>Greenhouse Gases</u>	- Any gas that absorbs infrared radiation in the atmosphere. Greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxide (N ₂ O), hydrochlorofluorocarbons (HCFCs), ozone (O ₃), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF ₆).
<u>Indirect emissions</u>	- <i>suggest considering two distinct definitions (consistent with ISO 14064):</i> <ol style="list-style-type: none"> Energy indirect emissions - means greenhouse gas emissions associated with the import and use of electricity, steam and hot/chilled water from sources outside the entity boundaries; Other indirect emissions - means greenhouse gas emissions attributable to an entity's activities, but occurring from GHG sources that are owned or controlled by another entity, excluding energy indirect emissions.
<u>Net Emissions or net entity-wide emissions</u>	- means the total net annual contribution of the greenhouse gases specifically identified in section 300.6(f) to the atmosphere by an entity: total, entity-wide emissions, both direct and indirect, minus entity-wide sequestration. In addition to net emissions, direct and indirect emissions must also be disclosed separately to avoid double counting among entities.
<u>Fugitive emissions</u>	- means leakage of greenhouse gases from equipment associated with the production, processing, transmission and/or transportation of fossil fuels or other materials, such as HFC leaks from refrigeration, SF ₆ from electrical power distributors, and methane from solid waste landfills, among others, that are not emitted via a pipe(s) or stack(s). Fugitive emissions also include evaporative or non-point emission sources, such as wastewater treatment.
<u>Process emissions</u>	- refers to the non-combustion (i.e., vented) emissions of greenhouse gases from pipe(s), stack(s), or other point sources associated with the production, processing, transmissions, and/or transportation of fossil fuels or other materials (e.g., PFC emissions from aluminum production).
<u>Sequestration</u>	- Storage of CO ₂ via uptake or capture either through biologic sinks or physical processes
<u>Source</u>	- Any physical unit or process or activity that releases greenhouse gases to the atmosphere.

Defining Reporting Entities {300.3}

In defining the GHG reporting entity it is of utmost importance that the report be relevant. Namely, it should contain the information that report users – both internal and external to the reporting organization – consider significant and need for their decision-making.

In the *Petroleum Industry Guidelines for Reporting GHG Emissions*, published jointly by API/IPIECA/OGP in December 2003, the industry elaborates on the proper selection of entity boundaries for petroleum industry operations worldwide, with emphasis on the special circumstances encountered by the myriad of financial arrangements, such as joint-ventures and production-sharing agreements that are prevalent in the industry. The key feature of any boundaries selected should be the transparent documentation of the choices made and an explanation of the organization and control of the reporting entity.

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The table below encapsulates some specific comments in response to various issues raised by the US DOE in this section:

Issues raised by DOE	API Comments
<ul style="list-style-type: none">Are the proposed guidelines likely to cause entities to establish boundaries that reflect a higher level of corporate or institutional aggregation, as is desired?What additional provisions might preserve flexibility in the establishment of boundaries while also preventing or further discouraging the shifting of emissions to non-reporting parts of the entity in order to create the appearance of net emission reductions?	<ul style="list-style-type: none">The proposed guidelines provide sufficient incentives for entities to report at the highest practical level of aggregation. Our concern is that they may discourage reporting at lower levels of aggregation.API does not believe that it is practical to shift significant amounts of emissions from reporting to non-reporting portions of an entity when the inventory reports are well documented.DOE should allow large companies to report in a phased approach, such that entities could be defined as small as a project, a refinery or a business unit. This approach would facilitate participation by companies in the oil and gas industry, which frequently involve large numbers of disparate facilities.For example, a large oil and gas company may encompass tens of thousands of oil and gas wells, many processing facilities, miles of pipeline, numerous ships and barges, multiple refineries, and thousands of marketing and retail outlets.
<ul style="list-style-type: none">How might the Guidelines provide the flexibility needed by entities with special circumstances, while discouraging abuses of this flexibility that could produce misleading impressions of entity performance?	<ul style="list-style-type: none">By allowing for a phased-in approach, over perhaps a 4-year, or four 12-month time-periods, a corporation can phase in its business entities until all corporate emissions are reported. This will encourage more companies to report.Delaying participation in the 1605(b) program until each and every facility has a robust and verifiable emissions inventory could severely restrict participation in the program when reliable information is available for certain components of large companies, but not for each and every emission source within an entity.
<ul style="list-style-type: none">Should trade associations and other third parties be required to submit some or all of the entity-specific data that might be required by the revised Guidelines?	<ul style="list-style-type: none">API believes that the use of the term “required” by the US DOE is inappropriate and inaccurate in the context of a voluntary program of estimating and reporting.Trade associations normally provide summary data based on aggregation of information received from their members.Trade associations are generally member driven, thus, they could report members entity data, to the DOE, only if the members so desire.

<ul style="list-style-type: none"> Should the CEOs, other senior officials, or heads of entities be required to certify the accuracy of their companies' reports when submitted to or through trade associations? Should trade associations and other third parties be able to "register emission reductions" or only file reports for the record? 	<ul style="list-style-type: none"> Even if trade associations decide to submit reports on behalf of their members, the CEOs should not be the ones certifying the data. A senior company official who is directly responsible and accountable for this program should be designated as the signatory on submitted reports, as discussed below. Organizations or trade associations should be able to report emissions and/or emission reductions, if their members so request, but not to "register" these emission reductions. It is strongly recommended that any participating organizations or trade associations adopt a consistent methodology that is consistent with {300.6} and {300.7} as discussed below.
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Defining Entity Boundaries {300.4}

Entities would normally choose to report their GHG emissions either based on their operational control of facilities or on their equity share of facilities operation, as discussed below. For a large and complex entity, it might be extremely resource intensive to ensure that no double counting is occurring in any of its widespread operations. Requiring that entities ensure, for shared ownership facilities, that no double counting have occurred is burdensome and might lead to undercounting by discouraging entities from reporting equity share emissions for those activities where they have no operational control.

The global Petroleum Industry Guidelines provide two approaches for addressing the myriad of joint ventures and other contractual agreements that typify petroleum industry operations:

- Operational Control approach - a company reports 100 percent of the emissions from joint ventures over which it has operational control and none of the emissions from joint ventures it does not control. A variety of different criteria exist for determining operational control. It is important to note that based on the Industry Guidelines, companies in the petroleum industry are deemed to have operational control when: *The company has authority to introduce and implement its operational and environmental, health, and safety (EHS) policies at the joint venture.*
- Equity Share Approach - a company reports GHG emissions from joint ventures according to its share of equity in the venture. Equity share is defined as the percentage of economic interest or benefit derived from the venture (such as production sharing arrangements). This approach is based on, and is very similar to, financial accounting.

Annex A provides an example on how these approaches can be implemented for a fictional company.

Issues Raised by DOE	API Recommendations
<ul style="list-style-type: none"> What is the desirability of more prescriptive approaches to the definition of entities, such as a requirement that entity definitions correspond to those used for Federal tax purposes? 	<ul style="list-style-type: none"> The definition of the entity boundaries is best handled by individual reporters, based on guidance provided by their industry sector (such as the Petroleum Industry GHG Reporting Guidelines), which take into account the special circumstances encountered in industry operations, as discussed above.

	<ul style="list-style-type: none"> DOE should retain as much flexibility as possible for the reporters to define their reporting boundaries based on the substance of their operation and economic reality and not merely their legal form.
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Submitting an entity statement {300.5}

The Draft Guidelines provide a long and detailed list of the requirements for inclusion in the entity statement. API recommends that DOE look to strike a balance between a very detailed statement that includes an exhaustive listing of all sources and equipment as compared to a statement that provides sufficient detail of the entity boundaries and the activities included.

An entity statement should be designed to clarify the information provided in the emissions inventory and yet should not be so onerous that it will prevent entities from choosing to report.

Entity-Wide Reporting of Emissions Inventories {300.6}

The US DOE Draft General Guidelines point out that the entity-wide emissions inventory is comprised of direct emissions, indirect emissions and entity-wide inventories of changes in terrestrial carbon stock.

In defining the entity boundaries it is also important to consider the gases covered and the definition of applicable sources and sinks. API supports the distinction between Direct and Indirect emission sources and urges the US DOE amend the definition of Indirect Emissions, as provided above, in order to eliminate confusion and to maintain compatibility with other global guidelines.

API supports the distinction provided for separating the reports of direct vs. indirect emissions. Specific methods that are applicable to Petroleum Industry operations are provided in the *API Compendium* (revised February 2004). Specific comments addressing each of the components of the inventory are provided in the table below:

Issues raised by DOE	API Recommendations
<ul style="list-style-type: none"> Direct emissions inventories 	<ul style="list-style-type: none"> The Petroleum Industry Guidelines address the inclusion of all directly operated emission sources that are relevant to maintaining industry operations The <i>API Compendium</i> provides emission estimation methods specifically suited for Oil & Gas operations
<ul style="list-style-type: none"> Indirect emissions associated with purchased energy 	<ul style="list-style-type: none"> The <i>API Compendium</i> follows the recommendations provided by the EIA for calculating indirect emissions associated with purchased electricity. The <i>API Compendium</i> also provides several methods for estimating GHG emissions based on fuel consumption (for heating/cooling and steam production). API also recommends splitting the definition of indirect emissions to specifically highlight those that are associated with purchase energy and other indirect emissions (see proposed language change under 300.2 Definitions above).
<ul style="list-style-type: none"> Entity-wide emissions associated with changes in terrestrial carbon stocks 	<ul style="list-style-type: none"> The current proposal requirement for keeping track of changes in terrestrial carbon stock would pose an undue

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	<p>burden for reporting entities that own large amounts of land and are not engaged in agriculture or forestry.</p> <ul style="list-style-type: none"> ▪ The implication is that if a natural gas producer, or a pipeline operator, wanted to register emission reductions from its operations it would also have to report changes in carbon stocks on its land. ▪ API recommends that for Oil & Gas operations the reporting of sinks should not be a requirement for registration.
<ul style="list-style-type: none"> ▪ Treatment of de Minimis emissions – US DOE currently proposes that “A reporting entity may exclude particular sources of emissions or sequestration if the total quantities excluded represent less than 3% of the total annual CO₂ equivalent emissions of the entity or less than 10,000 metric tons of CO₂ equivalent, whichever is less” 	<ul style="list-style-type: none"> ▪ As a rule of thumb, large sources of continuous emissions are easy to quantify, while smaller, or intermittent, sources are more difficult. ▪ API contends that any numerical threshold value is arbitrary and premature, at this time, unless the US DOE has more precise data to justify the selected values. ▪ If the US DOE insists on selecting one of the proposed threshold options, API would urge DOE to adopt, as a minimum, the option of defining significance as 3% percent or 10,000 metric tons of CO₂ equivalent, whichever is greater.
<ul style="list-style-type: none"> ▪ What are criteria for identifying additional greenhouse gases and the procedures for developing the necessary Technical Guidelines? 	<ul style="list-style-type: none"> ▪ The inclusion of other GHGs should be based on solid scientific information about the global warming potential of such gases and their relevance. ▪ If Global Warming Potential values are available for other gases they could be provided in the Technical Guidelines for use by reporting entities, at their discretion.
<ul style="list-style-type: none"> ▪ Units for reporting 	<ul style="list-style-type: none"> ▪ API supports the US DOE proposal for consistent reporting units based on metric units ▪ The <i>API Compendium</i> provides all emission factors in their original units (per reference citation) and a conversion to metric units for worldwide applicability.

Entity-Wide Emission Reductions {300.7}

The current DOE proposal states that in order to be eligible to register emission reductions, entities with substantial emissions (an annual average in excess of 10,000 tons of CO₂ equivalent) would need to report annual entity-wide inventories of their emissions and sequestration. It also states that the entity that generated the emission reductions or sequestration is the entity presumed to have the right to report and register any emission reductions or sequestration.

API's comments on these issues is provided in the table below:

Issues raised by DOE	API Recommendations
<ul style="list-style-type: none"> ▪ Comments are specifically solicited on (1) whether 10,000 tons of CO₂-equivalent emissions would be the appropriate threshold quantity to achieve this objective, and (2) the appropriate period of time over which small entities should be permitted to average their 	<ul style="list-style-type: none"> ▪ API has stated above that selecting a numerical value is premature and arbitrary at this time. The US DOE needs to address this with more precise data in the context of the pending Technical Guidelines. ▪ For companies whose primary emissions are non-

annual emission rates.	CO ₂ gases, a cut-off of 10,000 metric tons of CO ₂ equivalent emissions will amount to less than 500 metric tons of CH ₄ or a little over 30 metric tons of N ₂ O, which is a very low threshold for requiring entity-wide emissions reporting prior to “registering” emission reductions achieved by company actions or projects.
<ul style="list-style-type: none"> DOE is also soliciting comments on whether these special rules for small emitters are appropriate and how to ensure that reductions reported by small emitters are not a result of shifting emissions to non-reporting parts of the entity. 	<ul style="list-style-type: none"> Small emitters, by the nature of their entity, are less complex and organizationally are simpler in structure; therefore there might be less chances of shifting emissions. The rules should be crafted so as to encourage participation by small and mid-size enterprises.

Calculating Emission Reduction {300.8}

Guidelines recommend the use of emission intensity indicators as the basis for determining emission reductions, but would permit the use of several other methods to calculate emission reductions and sequestration as long as the method used excludes reductions caused by reductions in output.

API is concerned by the US DOE requirement for defining emissions intensity solely on the basis of output measures. Production levels might be changing for a variety of reasons not associated with planned reductions in GHG emissions. Output might be impacted both by market conditions and by changes in product slate and/or specifications (such as those anticipated for gasoline and diesel). Therefore it might be more appropriate to use measures of overall production throughput.

Issues raised by DOE	API Recommendations
<ul style="list-style-type: none"> DOE is recommending establishment of a base-year (or base period) 	<ul style="list-style-type: none"> API supports the establishment of a base period. A base year (or a base period) would be a consecutive 12 months (or multiple of 12- month periods – up to four years) but might not necessarily correspond to a calendar year.
<ul style="list-style-type: none"> DOE proposed five methods for calculating emission reductions: <ol style="list-style-type: none"> Changes in emissions intensity Changes in absolute emissions Changes in carbon storage (for actions within entity boundaries) Changes in avoided emissions (for actions within entity boundaries) Project-based emission reductions (for actions within entity boundaries) Comments are invited on the appropriateness of each of the methods and on the definitions provided in the proposed Guidelines 	<ul style="list-style-type: none"> API supports the inclusion of all five methods to allow for maximum flexibility and allow each reporter to select the methods appropriate for their operations. The <i>API Compendium</i> can serve as the basis for estimating absolute emissions from oil & gas industry operations. API is concerned by the DOE requirement to define emissions intensity only on the basis of restrictive output indicators; it is especially concerned about the need to use a single indicator entity-wide. API contends that it might not be appropriate for complex organizations that are comprised of a variety of operations to have a single meaningful indicator for normalizing their emissions and tracking their changes in GHG intensity entity-

	<p>wide.</p> <ul style="list-style-type: none"> ▪ API recommends that entities be allowed to register emission reductions resulting from plant shutdowns if (a) they use intensity measures for reporting, or (b) their company-wide production levels are maintained (increased efficiency). ▪ More generally, as noted in item #7 above, the proposal unnecessarily complicates entity reporting and registration by attempting to exclude output related or product change related emission reductions. Specifically, restricting the reporting and registration of emissions reductions associated “in whole or in part” with reductions in output, plant closings or “changes in product” unnecessarily complicates participation in the 1605(b) program. ▪ API also maintains that companies could report absolute emissions and then track their GHG intensity by using one or more physical indicators that could be related to output (or throughput).
<ul style="list-style-type: none"> ▪ Determining the entity responsible for emission reductions 	<ul style="list-style-type: none"> ▪ API through its joint industry guidelines would like to encourage wider reporting by its members by defining the option of reporting based on equity share in non-operated entities. ▪ API supports DOE’s proposal that reporting of emission reductions could be based on agreement(s) between the entities involved in a shared operation. ▪ API also supports the intent of trying to avoid double counting, but it is concerned with the requirement that the reporting entity needs to ensure that no double counting has occurred, as this might deter entities from including their equity share emissions in non-operated facilities.

Reporting and Recordkeeping Criteria {300.9}

DOE contends that the proposed levels of data reporting and recordkeeping represent a middle ground between the views of stakeholders who favor summary data and those stakeholders who prefer more detailed data that would be the basis for independent verification.

API supports this approach, as it seems sufficient to achieve this objective. It also encourages DOE to retain the flexibility provided by allowing the base year to be the average emissions, or emissions intensity, during a base period of up to four years in length.

API participates in the Climate Vision coalition with other trade associations. API members participate in a variety of other initiatives such as EPA’s Climate Leaders and the California Climate Action Registry. In order to accommodate all these activities, promote consistency of reporting and minimize burden, API

DOE 1605(b) Comments

would recommend that the DOE reporting requirements be tailored to be compatible with these other initiatives.

In addition, in the area of sustaining emission reporting, API recommends that DOE consider not deleting information about entities that do not report on a yearly basis. Entities should be allowed, under certain considerations, to report on an alternate schedule (say every two-years) if they continue to reference their absolute emissions (or emissions intensity) to the same base period, as initially selected.

API also contends that the EIA needs to be provided with adequate resources to ensure that the database is updated regularly and that summary reports are published in a timely fashion.

Issues raised by DOE	API Recommendations
<ul style="list-style-type: none">▪ Should the CEOs, other senior officials, or heads of entities be required to certify the accuracy of their companies' reports when submitted to or through trade associations?▪ Should trade associations and other third parties be able to "register emission reductions" or only file reports for the record?	<ul style="list-style-type: none">▪ Company executive management should be tasked with designating a senior company official who is directly responsible and accountable for this activity. This designated official should certify the accuracy of their entity's report and not the company CEO.▪ Trade associations can be used for consolidating emissions from small entities.▪ If trade associations, or other organizations, are going to report GHG emission reductions on behalf of their members they should do it in accordance with 300.6 and 300.7, as discussed above.
<ul style="list-style-type: none">▪ Are there possible alternatives that would permit participating entities to report (but not register) the emissions and emission reductions associated with other gases, even if DOE's Technical Guidelines did not specifically cover such other gases?	<ul style="list-style-type: none">▪ API would urge DOE to retain enough flexibility and allow the reporting entity to decide if they want to include other gases, provided that the information is clearly annotated and reported separately from the gases addressed by the US DOE Technical Guidelines.

Certification of Reports {300.10}

API supports the flexibility offered by the DOE proposal in this area. It urges DOE to streamline the process and provide in its technical guidelines a procedure for such self-certification that does not require a CEO's signature. API contends that mandating a CEO's signature would deter companies from electing to report. An alternative procedure, one that uses a designated company official as certifier, should be implemented, as discussed above.

Independent Verification {300.11}

It has been industry's experience through the development of Environmental Management Systems and registration to the ISO 14001 standard that independent verification does not necessarily mean external auditors.

API would like to recommend against a 'one-size-fits-all' approach that would require external independent verification of all reports, since it would make reporting far less attractive. It is recognized that various regimes that are promoting emissions trading might need these independent audits, but it should not be imposed on this federal Registry if such transferable emission reduction credits and/or trading is not contemplated at this time.

API contends that private markets would determine the type of independent verification that is necessary and urges DOE to maintain flexibility by allowing a range of options, including internal verification of emission reductions, in order to encourage participation in the enhanced 1605(b) registry.

Cross-Cutting and Other Important Issues

A brief discussion of several crosscutting issues presented in the preamble is provided below:

- **Information that must be submitted by a reporting entity about the emission reductions achieved by a non-reporting entity.**

API does not support requiring direct reports by all entities participating in projects or other emission reduction activities as it might discourage support for such offset projects. The reporting entity could provide relevant information that pertains directly to the joint activity reported. The registration of emission reduction offset projects should be governed by financial agreements or other contractual arrangements between the reporting entity and the external organization where the emission reduction is accomplished.

- **Eligibility of non-U.S. emissions and emission reductions for reporting under the revised program.**

API encourages DOE to allow non-US emissions offsets and emission reductions to be reported in this voluntary registry. Companies could establish their own approaches, as they would do in a parallel fashion to what they are doing under reporting US emissions. This will include proper description of the operation in their entity statement using consistent methods for estimating emissions and providing the required certification by the designated entity official.

API supports especially the inclusion of non-US emissions in this program for activities being undertaken in areas of the world, which do not have their own program for such reporting, but it should not be mandatory to report on all non-U.S. emission reductions achieved in a company's non-U.S. operations as it might create duplication with reporting to other national authorities that have established reporting schemes.

- **Relationship of proposed Guidelines to Climate VISION, Climate Leaders and other voluntary programs to reduce greenhouse gas emissions**

API has focused its activities over the past several years in an effort to promote consistency in estimation and reporting of greenhouse gas emissions from petroleum industry operations worldwide. To attain these goals it has developed the *API Compendium* and participated in developing joint *Petroleum Industry Guidelines* for the petroleum industry worldwide.

API is a member of DOE's Climate Vision program and its members participate in several voluntary programs such as Climate Leaders and the API Climate Challenge programs that have uniquely negotiated rules that should be honored. Nonetheless, it is essential that in the future both the guidelines for establishing entity boundaries and the methodology for estimating entity-wide emissions and emission reductions would be harmonized, under the US DOE 1605(b) program, in order to simplify the procedures and encourage participation.

- **DOE is soliciting comment on the merits of using the 1605(b) program for documenting progress of participants in voluntary Federal programs towards meeting their emissions reduction goals.**

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API supports the goal of establishing DOE 1605(b) as the single federal program for documenting progress under other initiatives such as EPA Climate Leaders, the DOE Climate Vision, etc., and would encourage all federal agencies to work toward common boundaries and methodologies for estimating greenhouse gas emissions.

Annex A – Illustrative Example on Setting Entity Boundaries for Petroleum Industry Operations ^(*)

Holland Industries is an integrated petroleum company comprising a number of companies and joint ventures active in the production and marketing of petrochemicals. Table 3-2 outlines the organizational structure of Holland Industries and explains how GHG emissions from the different operations are accounted for under the equity share and operational control approaches.

Table 3-2. Holland Industries - Organizational Structure and GHG Emissions Accounting

Name	Legal structure and partners	Interest held by Holland Industries	Operational and HSE policies	Emissions accounted for by Holland Industries	
				Equity share	Operational control
Holland America	Incorporated company	83%	Holland Industries	83%	100%
BGB	Jointly Controlled JV	45% by Holland America	Partner	37.35% (83% x 45%)	0%
IRW	Subsidiary of Holland America	75% by Holland America	Holland America	62.25% (83% x 75%)	100%
Kahuna Chemicals	Non-incorporated joint venture, jointly controlled with 2 other partners: ICT and BCSF	33.3%	ICT	33.3%	0%
Nallo	Incorporated joint venture, other partner Nagua Co.	56%	Nallo	56%	0%
QuickFix	Incorporated joint venture, other partner Majox	43%	Holland Industries	43%	100%
Syntal	Incorporated company, subsidiary of Erewhon Co.	8%	Erewhon Co.	0%	0%

Note that in this example, Holland America (not Holland Industries) holds a 45% interest in BGB and a 75% interest in IRW. GHG emissions are thus apportioned first at the subsidiary level before they are consolidated at the group level.

^(*) Source: IPIECA/OGP/API (December 2003) “Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions”, London, United Kingdom.

**Annex B – Illustrative Example on Emission Reduction Scenarios for
Combined Heat & Power Projects (CHP or cogeneration)
{based on an API study in progress}**

Emission reductions from cogeneration may result from an improvement in overall system efficiency compared to the separate generation of electricity and steam from conventional fossil fuel-fired boilers. For oil and gas industry operations, cogeneration provides potentially attractive energy efficiency and greenhouse gas reduction opportunities.

Three key areas that need to be addressed to determine GHG emission reduction potential for such projects:

- I. Pre- and post-project direct emissions, thermal energy and electricity demands, and indirect energy imports and exports;
- II. Thorough characterization of displaced direct and indirect energy sources; and
- III. Appropriate definitions of source and project operational boundaries.

All these procedures must be developed to ensure that the GHG emissions reductions from cogeneration projects are credible and verifiable. The exact magnitude of greenhouse gas emission reductions from cogeneration is dependent on the form of generation being displaced, while taking into account both efficiency and fuel impacts.

In cases where electricity is purchased from a local grid that represents mostly coal-fired generation, the overall greenhouse gas emission reductions from cogeneration may be substantial, due to both fuel carbon content and overall system efficiency differences. However, in cases where electricity is purchased in a geographic region of significant hydroelectric, renewable, and/or nuclear generation, emission reductions may be significantly lower, and in some cases could potentially result in a net increase in overall emissions resulting from the conversion to cogeneration.

Two examples, discussed briefly below, were developed for examining different scenarios and associated complexities that may need to be considered for estimating GHG emission reductions from CHP projects:

- **Scenario 1. A hypothetical ‘greenfield’ cogeneration plant** - The plant is developed primarily for independent power production, exports nearly all energy produced. For this example, the baseline emissions were approximated for an assumed “most likely” scenario in the absence of the project. For illustrative purposes, locally available electricity was selected to represent the baseline conditions, and emissions were estimated using electric grid emission factors for an assumed location.
- **Scenario 2. A hypothetical facility installs a cogeneration unit to improve overall efficiency** – For this plant on-site energy use is assumed to remain essentially constant pre- and post-project, with excess energy sold offsite. This example examines exported energy and the complexities associated with determining emission reductions for increased efficiency. Two methods are presented for estimating baseline emissions: i) a grid displacement approach for exported electricity based on an assumed location; and ii) a comparison to natural gas-fired turbine combined cycle (NGCC), which was chosen to represent the “most likely” technology.

Estimated emissions for the various cogeneration case study scenarios examined are summarized in the Table B-1 below. Emission estimates from combustion sources and electricity usage are based on calculation methodologies provided in the *API Compendium*.

Table B-1. Summary of Emission Reductions from Cogeneration Case Study Scenarios

Scenario Description	Case Study	Estimated % Emission Reduction ^a
Scenario 1. New cogeneration plant - Consumes 1.556×10^{16} J (14,760,000 million BTU) of natural gas. b- Generates 1,523,000 MW-hr electricity and 1.404×10^{15} J (1,332,000 million BTU) steam. - Cogeneration requires 38,500 MW-hr electricity.	Greenfield Cogeneration Plant	43% ^b
Hypothetical Refinery - Purchases 206,000 MW-hr electricity. - Burns 190,786 m ³ (1,200,000 barrels) diesel to generate 2.857×10^{15} J (2,710,000 million BTU) steam for on-site use.	Existing Facility - Baseline Conditions	(Baseline)
Scenario 2. On-site cogeneration plant - Consumes 8.572×10^{15} J (8,131,500 million BTU) of natural gas to produce 1,100,600 MW-hr electricity and 3.810×10^{15} J (3,614,000 million BTU) steam. - Refinery requires 2.857×10^{15} J (2,710,000 million BTU) steam and 244,500 MW-hr electricity. - Excess energy is sold offsite.	Cogeneration Increased Efficiency – Grid Replacement Approach ^c	65%
	Cogeneration Increased Efficiency – “Most Likely” Alternative Technology Approach ^d	63%

^a Note - percent reductions are based on assumed conditions for the example case study scenarios and may not be representative of actual reductions for real-world applications.

^b Reduction estimates for the Greenfield plant are based on comparison with electric grid emissions for an assumed location.

^c The grid displacement approach is based on the average carbon intensity of power generation in the region or state (or country), projected over the lifetime of the project. The location was assumed for this scenario.

^d The “most likely” technology approach is based on recent projects and those projected to develop in the same relative timeframe. Estimates for this example are based on electricity generated from a natural gas-fired combined cycle (NGCC) turbine.